

# A tale of two countries: how decentralized organization and long-term investment build resilient healthcare systems

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Healthcare systems are faced with unique challenges during the ongoing Covid-19 pandemic. This viewpoint compares the response to the Covid-19 pandemic in the UK and in Germany. Despite being two large European countries of comparable size with good healthcare systems and similar patterns of exposure to Covid-19, Covid-19 related deaths in the UK currently far outnumber those in Germany. This has several reasons, but two explanations stick out: 1. lower long-term investment into healthcare in the UK rendered the NHS more vulnerable to Covid-19; 2. the existence of a well-governed decentralised and partially redundant organisation of healthcare increased resilience in Germany's healthcare systems, enhancing the ability to adapt in response to unexpected challenges to healthcare. The response to the current pandemic also illustrates the power and the necessity to learn from each other through transparent communication of successes and mistakes.

## Keywords

Healthcare delivery • Health economics • Cardiovascular medicine • Covid-19 • Mortality

On Tuesday after Easter 2020, there were 130,694 patients with confirmed Covid-19 infections in Germany, and 94,729 confirmed patients with Covid-19 infection in the United Kingdom of Great Britain and Northern Ireland (UK). Of these, 12,107 patients had died in the UK, while only 3,261 patients had died in Germany (Figure 1).<sup>1</sup> Differences in the number of patients with confirmed Covid-19 infections can be explained by differences in testing for the disease. The number of deaths attributed to Covid-19, while also subject to some variation based on the definition of "Covid-19 related deaths", are more comparable between countries.

There are many similarities between the UK and Germany. Both nations are amongst the richest in the world and pride themselves of excellent, widely accessible healthcare systems. Both countries were faced with a high number of patients who caught the disease while on holiday in, or travelling to, countries such as Italy, Spain, and Austria. The governments of both nations acted swiftly and imposed social distancing in response to the Covid-19 pandemic, following scientific advice. The populations of both countries followed these changes in their daily lives with commendable discipline. Outbursts of solidarity,

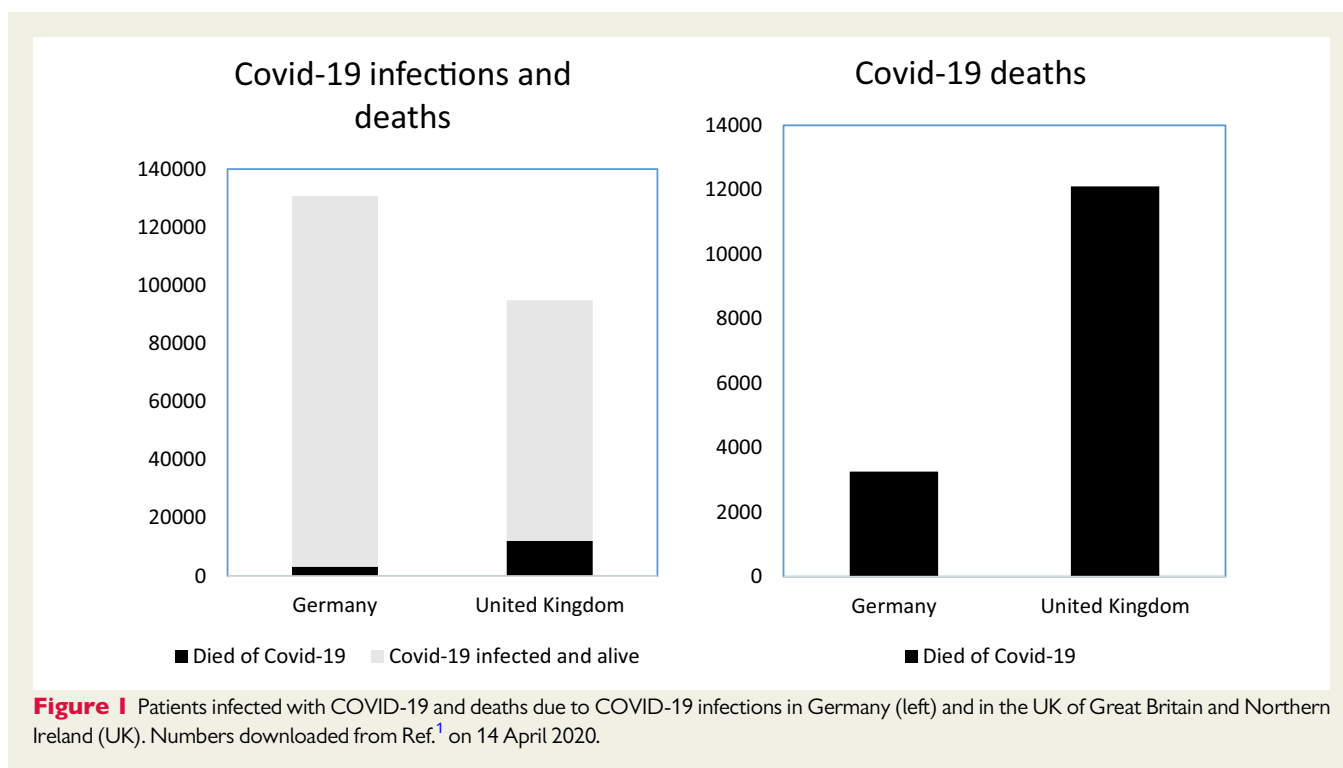
support for vulnerable populations, and the willingness of healthcare workers in both countries to step up to the Covid-19 challenge are hallmarks of the public reaction to the pandemic in Germany and in the UK. Being in transition between posts from the UK to Germany, I know first-hand of the huge dedication and commitment in the health services of both countries. Strong national economies, embedded in the productive European Union, redirected efforts to the production of medical kit such as ventilators, protective gear, and the creative minds of both countries came up with brilliant innovations to help fight the Covid-19 pandemic. Yet, almost four times as many patients have died of Covid-19 in the UK than in Germany. What drives this stark contrast?

## The two-percent gap

One simple observation is what I would like to refer to as the "two percent gap": In 2011, when I joined the NHS as a clinical academic, the UK had almost caught up with most other European nations in terms of healthcare spending. In 2011, there was a

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relatively small remaining spending gap when spending for health is expressed as a fraction of gross domestic product. Unfortunately, the UK spending on health was further squeezed in the last nine years. The remaining resource that is currently available to deliver and develop healthcare services was just about sufficient to maintain a functioning health service in the NHS under normal conditions, with signs of increasing strain, e.g. increasing waiting times for elective procedures and progressive 'winter pressures'. More importantly, the lack of funding blocked investment into updating and maintaining health infrastructure such as hospitals. A simple number illustrates this: At the outbreak of the Covid-19 pandemic, there were approximately 5000 intensive care beds equipped for mechanical ventilation in the UK, serving a population of ca 60 M (ca. 80 beds/M). Germany maintained 28,000 such beds at the same time, serving a population of ca 80 M (ca. 350 beds/M). In response to the emerging Covid-19 pandemic, the UK mounted a remarkable effort, involving deployment of military staff and requisition of large exhibition centres, to increase that capacity to ca 8000 beds by the end of April. Germany, likewise, is expected to increase its capacity to over 50,000 beds by the end of April through internal reorganisation of its hospitals. Progressive reductions in funding also prevented updating public health services and the provision of emergency capacity for unusual situations in the UK. The ensuing differences in the delivery of testing for Covid-19 infections left the UK authorities and the NHS at much less control over the Covid-19 outbreak than their German counterparts. Germany has been able to rapidly test most patients with symptoms of Covid-19 infections and their close contacts, including all potentially affected healthcare

workers. The regional public health authorities in Bavaria even managed to isolate the first cases and to contain the outbreak of the disease for several weeks. The value of early and rapid testing and isolation of affected patients and their contacts has been illustrated e.g. in the initial success in containing Covid-19 in Singapore.<sup>2</sup> Similar, broad testing efforts are underway in Hong Kong, South Korea, and more recently in Japan.<sup>3</sup> The UK lacks test centres to provide sufficient testing capacity for Covid-19, and remains in the early stages of ramping up its ability to test affected persons, still falling short even in testing NHS staff.<sup>4</sup>

## Resilience through multilayered and partially redundant healthcare organisation

My view, informed by long practice as a clinician and clinical researcher in the NHS and in Germany, is that there may be another resilience factor embedded into the organisation of healthcare in Germany. The centralised organisation of the NHS enables efficiency savings, e.g. by creating large consortia for purchasing kit and services, or through nationally agreed guidelines defining which type of treatment is provided within the NHS. Its system of estimating cost effectiveness, coordinated via the National Institute of Clinical Excellence (NICE), has been an admired model for health economic analysis throughout Europe and the world since the late 1990's. The NHS is regarded as one of the most cost effective healthcare systems in the world. At the same time, this centralised system has taken away

control from local leaders, created a culture of ‘following the rules’ and a focus on central targets. Reorganisations have until recently shifted responsibilities to central NHS bodies in London for England and Wales. The NHS already delivers healthcare through large, central trusts that e.g. provide almost all specialist care. The same centralisation occurred in individual NHS organisations, where central leadership of NHS trusts or clinical commissioning groups decides and signs off details of work patterns for individual doctors, nurses, specialty groups, and practices. Healthcare delivery in Germany is split across several groups of providers, funded centrally through a mandatory insurance scheme. Most outpatient practices are small businesses with a few employees, and hospitals are led by a mix of local authorities, universities, share holder-owned corporations, churches, individual charities, and other organisations. While this is governed and coordinated, e.g. through regional hospital plans, there is little central control over regional delivery of healthcare. Public health is also organised regionally within the Bundesländer and Landkreise, with coordination through the National Robert Koch Institute. This system, which may appear costly for the delivery of normal care, proved remarkably resilient to the ‘Black Swan’ challenge of Covid-19. Local reactions were different in different regions, enabling initiatives and innovations to be developed, deployed, and tested rapidly on small scales. This was largely delivered in friendly competition, with each local leadership group aiming to find the best solutions locally and to demonstrate their ability to live up to the challenge. Embedded into a culture of rapid and honest communication about good practice and mistakes, this enabled learning, innovation, and resilience. This multi-layered, competitive, ‘federal’ system, with decentralised and overlapping responsibilities, was also able to roll out testing, to procure protective gear and medical devices, and to develop innovative patterns of working, thereby maintaining provision of healthcare and protecting the health work force. Close exchange between regional governments and a willingness to scale up good concepts nationally enabled an agile, effective response to the Covid-19 pandemic. Critically, regional and local public health and testing resources were sufficient to enable some degree of tracking contacts and containing infections. The ability to test infected patients and their contacts already shows important knock-on effects on the health and social care workforce. This system of local and regional competition and innovation has the potential to sustain resilience as the Covid-19 pandemic moves into its next phases, where detrimental effects on health not directly related to Covid-19 infections are likely to create additional threats to health and wellbeing. More than half of the excess deaths in Lombardy, severely affected regions of Spain,<sup>5</sup> and probably in the UK,<sup>6</sup> are not due to Covid-19 infections, but probably driven by reduced delivery of care for other conditions such as cancer or cardiovascular diseases. This emerging threat requires re-initiation of care for patients with chronic diseases during the Covid-19 pandemic. Paired with the continued challenge of diagnosing and treating Covid-19 infections, this will require additional ingenuity, innovation, and resilience in healthcare in the months to come.

## Can we learn from each other?

This emerging tale of two countries faced with the Covid-19 pandemic illustrates three lessons:

- (1) Adequate long-term investment into healthcare is needed to be ready for unusual challenges to our health. Lack of such investment, while reducing expenditure in normal times, reduces resilience.
- (2) Well-governed decentralised and partially redundant organisation of healthcare builds resilience within healthcare systems. The ability to adapt and improve appears amplified in organisations that decentralise decisions and work patterns and accept redundancy.
- (3) The response to the current pandemic also illustrates the power and the necessity to learn from each other through transparent communication of successes and mistakes.

Implementing these lessons can help to prepare healthcare systems for the next phases of the Covid-19 pandemic and the unique challenges that we will all face in the weeks and months to come.

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**Data availability:** Data are available upon request.

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